**Noteguide for Free Fall - Videos 2H Name**

Problem Solving Tips

1 - Iff start and stop at same elevation

 5 -

2 -

 6 -

3 -



Example 1 - An object is launched straight up with a velocity of +33.0 m/s, and strikes the ground at the same elevation from which it is launched. Use the acceleration of gravity to be -9.81 m/s/s, and neglect air friction

1. When is it at the top?
2. How high does it go at the highest?
3. What total time is it in the air?
4. What is its velocity at an elevation of 45 m? At what times after launch does it reach this elevation?
5. What is its velocity and displacement at 5.20 s after launch?

Example 2 - A piece falls off a rocket that is 27.0 m above the ground when the rocket is moving upwards at 21.0 m/s. Neglect air friction.

1. Describe to your neighbor what the piece will do
2. To what height does the piece rise above its release point before coming down?
3. What is the velocity of impact of the piece with the ground?
4. What time does the piece take to reach the ground?